TABLE 1.—*Solar radiation intensities during May, 1923*—Continued.

[Gram-calories per minute per square centimeter of normal surface.]

Lincoln, Nebraska.

Date.	Sun's zenith distance.										
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon.
	75th meridian time.	Air mass.									Local mean solar time.
		A. M.					P. M.				
	e.	5.0	4.0	3.0	3.0	*1.0	2.0	3.0	4.0	5.0	e.
	mm.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm.*
May 4	6.27	.....	.....	1.13	1.26	1.51	1.23	1.01	0.88	0.87	4.95
7	9.14	.....	.....	.....	1.14	.....	1.24	1.05	0.93	0.82	7.29
8	3.15	.....	.....	.....	.....	.....	1.31	1.12	0.97	0.85	2.26
9	3.81	0.73	0.95	1.09	1.25	1.43	1.16	0.92	0.78	0.67	2.87
16	4.75	.....	.....	1.04	1.26	.....	.....	.....	.....	.....	4.57
25	7.04	.....	.....	.....	1.18	.....	.....	.....	.....	.....	6.27
26	8.48	.....	0.67	0.82	1.11	1.39	1.19	1.02	0.88	0.74	5.56
Means	.....	(0.73)	(0.81)	1.02	1.20	1.44	1.23	1.02	0.89	0.79	.....
Departures	.....	−0.05	−0.01	+0.05	+0.05	+0.06	+0.12	+0.08	+0.10	+0.05	.....

* Extrapolated.

TABLE 2.—*Solar and sky radiation received on a horizontal surface.*

Week beginning.	Average daily radiation.			Average daily departure for the week.			Excess or deficiency since first of year.		
	Washington.	Madison.	Lincoln.	Washington.	Madison.	Lincoln.	Washington.	Madison.	Lincoln.
	cal.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
May 7	416	490	666	−63	+22	+174	−2,853	+994	+2,288
14	459	434	495	−29	−44	−14	−3,054	+689	+2,187
21	579	593	464	+86	+113	−44	−2,449	+1,483	+1,878
28	501	516	535	+5	+28	+14	−2,413	+1,677	+1,976

WEATHER OF NORTH AMERICA AND ADJACENT OCEANS.

NORTH ATLANTIC OCEAN.

By F. A. YOUNG.

The average barometric readings for the month were from three-hundredths to one-tenth of an inch below the normal at land stations in Newfoundland, Nova Scotia, the Azores, the West Indies, and on the Atlantic coast of the United States. The average pressure at Valentia, Ireland, was somewhat higher than usual, while at London it was nearly normal.

The number of days on which fog was reported over the western part of the ocean was unusually large, and in the 5-degree square between latitude 40°–45° N., longitude 45°–50° W., it occurred on 19 days, a percentage of 61, as compared with the normal of 35 shown on the Pilot Chart; it was nearly as prevalent over the region between the 50th meridian and the American coast, the percentage ranging from 45 to 52. Fog was also frequently encountered over the middle section of the steamer lanes, while the European coast was comparatively free.

There was a most noticeable falling off in the number of days with winds of gale force as compared with April, and over the major part of the ocean the number was below the normal for May. The greatest number was reported from the 5-degree square between latitude 40°–45° N., longitude 45°–50° W., where it occurred on 5 days. It is a strange coincidence that in this same square the maximum amount of fog was recorded. Gales were reported on 4 days in the square immediately to the south and on from 2 to 3 days in the middle section of the steamer lanes, while they were not reported on more than 1 day in any 5-degree square east of the 30th meridian.

From the 1st to the 3d moderate weather was the rule over the entire ocean, with the exception of a slight disturbance in mid-ocean on the 2d and 3d.

On the 4th there was a fairly well-developed LOW central near latitude 40° N., longitude 62° W., its influence extending over a contracted area between the 37th and 47th parallels. Storm log:

American S. S. *Chickasaw City:*

Gale began on the 3d, wind NNE. Lowest barometer 29.60 inches at 1 a. m. on the 4th, wind NW., 8, in latitude 38° 18′ N., longitude 63° 35′ W. End at 2 p. m. on the 4th, wind W. Highest force of wind 9, NW., shifts NNW.-NW.-N.

On the 5th and 6th, while there were no depressions of any consequence over the ocean, reports were received of moderate gales on the latter date in the central and eastern sections.

On the 7th an area of low pressure covered Newfoundland; this moved slowly eastward, the center being near St. Johns on the 8th, with gales over a restricted area in the southeastern quadrant. Storm log:

French S. S. *Syria:*

Gale began on the 8th, wind S. Lowest barometer 29.78 inches from 2.30 to 7 p. m. on the 8th, wind S., 8, in latitude 39° 35′ N., longitude 46° 20′ W. End on the 8th, wind W. Highest force of wind 8, S.; steady S.

From the 9th to 11th favorable conditions prevailed, with the exception of moderate gales over a limited area in mid-ocean, and on the latter date they were also reported off the British coast.

British S. S. *Parthenia:*

Gale began on the 10th, wind NE. Lowest barometer 29.20 inches at 6.30 p. m. on the 10th, wind NE., 7, in latitude 58° 50′ N., longitude 7° 20′ W. End on the 11th, wind N. Highest force of the wind 8; shifts NE.-N.

Charts VIII and IX show the conditions on the 12th and 13th, respectively, when there was a disturbance in the region between the 35th and 45th parallels and the 40th and 60th meridians, and southwesterly gales were also reported off the American coast between Hatteras and New York. Storm logs:

British S. S. *Bolivian:*

Gale began on the 12th, wind NW. Lowest barometer 29.71 inches at 6 a. m. on the 12th, wind NW., in latitude 40° 16′ N., longitude 51° 04′ W. End on the 13th, wind NW. Highest force of wind 9; steady NW.

American S. S. *Currier:*

Gale began on the 12th, wind SW. Lowest barometer 29.75 inches at 2 p. m. on the 12th, wind SW., 7, in latitude 35° 55′ N., longitude 75° 22′ W. End on the 13th, wind SW., 6. Highest force of wind 8, SW.; steady SW.

On the 14th and 15th nothing unusual was reported, except that one vessel encountered heavy weather in southern waters, as shown by following storm log:

Italian S. S. *Ida Z. O.*

Gale began on the 13th, wind NW. Lowest barometer 29.84 inches at 2 a. m. on the 13th, wind NW., 6, in latitude 32° 20′ N., longitude 43° 30′ W. End on the 15th, wind NW. Highest force of wind 8, NW.; steady NW.

On the 16th and 17th easterly winds of gale force prevailed over the eastern and middle sections of the ocean, and on the former date one vessel reported snow near latitude 45 °N., longitude 24° W. On the 17th southerly gales were also reported along the American coast between Hatteras and Nantucket. Storm log:

British S. S. *Exeter City:*

Gale began on the 16th, wind E. Lowest barometer 29.78 inches at midnight on the 16th, wind E., 7, in latitude 44° N., longitude 36° 15′ W. End on the 18th, wind E. Highest force of wind 7, E.; steady E.

From the 18th to the 20th unusually quiet weather prevailed over practically the entire ocean. On the 21st there was a disturbance in the region southwest of the Azores, as shown by the following storm log.

Italian S. S. *Federica:*

Gale began on the 21st, wind SSW. Lowest barometer 29.72 inches at 6.40 a. m. on the 21st, wind WSW., 8, in latitude 34° 55′ N., longitude 34° 50′ W. End at 10 p. m. on the 21st, wind WSW. Highest force of wind 9; steady WSW.

From the 22d to the 24th summer conditions were again the rule, with here and then an isolated vessel that encountered fairly strong winds.

On the 25th the northern European coast was visited by northerly gales that covered a limited area. Storm log:

American S. S. *West Modus:*

Gale began on the 24th, wind NW. Lowest barometer 29.72 inches at 6 p. m. on the 24th, wind NW., 7, in latitude 59° 10′ N., longitude 10° 10′ W. End on the 25th, wind NNE. Highest force of wind 8, NNE.; shifts W.-NW.-N.-NNE.

On the 26th and 27th St. Johns, Newfoundland, was near the center of an area of low pressure, and while moderate weather prevailed in that vicinity a few vessels encountered gales in the territory between the 40th and 50th parallels and the 30th and 50th meridians, as shown by following storm log:

Italian S. S. *Piave:*

Gale began on the 26th, wind W. Lowest barometer 29.71 inches at 4 p. m. on the 26th, wind W., 9, in latitude 42° 30′ N., longitude 43° 54′ W. End on the 26th, wind WNW. Highest force of wind 10; shifts not given.

On the 28th the barometric reading was still comparatively low at St. Johns, although by the 29th it had risen considerably. On the 30th the pressure was high over the entire ocean, with the exception of the Gulf of Mexico, and light to moderate winds were reported from that locality. The following storm log was the only one received for the 30th:

American S. S. *West Modus:*

Gale began on the 30th, wind S. Lowest barometer 30.14 inches at 8 a. m. on the 30th, wind S., 6, in latitude 47° 32′ N., longitude 38° 13′ W. End of gale on the 30th, wind SW. Highest force of wind 8, S.; shifts S.-SW.

On the 31st a deep depression appeared, central near latitude 40° N., longitude 55° W., although judging from reports received, its influence did not extend far. Storm log:

British S. S. *Wells City:*

Gale began on the 30th, wind SE. Lowest barometer 29.14 inches at 4 a. m. on the 31st, wind WSW., 8, in latitude 41° 09′ N., longitude 56° 07′ W. End on the 31st, wind N. Highest force of wind 8, NW.; shifts SE.-SW.-NW.-N.

NORTH PACIFIC OCEAN.

By WILLIS E. HURD.

The incoming of summer conditions was well portrayed by the weather of May over the North Pacific Ocean. There was some rough weather over the northern routes, but the Aleutian LOW which, during the cooler months, exercises so major a control over the meteorological events in this region, could be seen as appreciably weakening. Therefore the gales experienced by steamers traversing these waters were less severe. The winter HIGH which continued along the China coast in April practically lost its identity in May, and the northeast monsoon seems in great measure to have given place to the transition weather normal to the season in lower Asiatic waters. Several storms appeared in this region, but most of them were of continental origin and of only moderate intensity. The one disturbance of considerable moment in the Far East was a typhoon, which will be mentioned later.

East of the 180th meridian the North Pacific HIGH practically controlled the weather over a great area after the 9th. Early in the month the weather of the region midway between the United States west coast and Hawaii was unsettled and the pressure moderately low until the 9th; thereafter the HIGH occupied its normal position with a crest of about 30.20 inches during the second decade. After the 20th the HIGH moved westward and intensified, so that its center, with an average pressure of 30.40 inches, lay near latitude 40° N., on the 155th meridian of west longitude.

In the Mexican coast region the weather was considerably affected by the fairly persistent low-pressure area which fluctuated over Mexico and the southwestern portion of the United States, giving frequent fresh northwesterly winds along the coast from San Francisco to Cape San Lucas and even farther southward, especially during the latter half of the month. South of the 15th parallel calms and light variable winds prevailed. Over the Gulf of Tehauntepec northeasterly to northwesterly winds of gale force were reported upon several occasions. On the 9th and 10th these gales reached a force of 9. On the 9th a gale of force 8 from north-northeast occurred in latitude 10° 50′ N., longitude 88° 49′ W. However, there were no pressure disturbances noted in this region.

At Honolulu pleasant weather was experienced. The prevailing wind was from the east, with maximum velocity, 33 E., occurring on the 24th. The average hourly velocity was 10.6 miles an hour, or 2.3 miles higher than the 19-year average. Sunshine was normal, but the rainfall, 0.36 inch, was 1.38 inches less than the normal, and the month was the third driest since 1905. Dry weather also prevailed on the California coast, San Francisco receiving only 7 per cent of the normal amount for May.

On the 3d and 4th of the month a storm moving eastward from Japan gave rise to moderate gales. On the 3d the American S. S. *President Taft* experienced a southerly gale, force 8, lowest pressure 29.63 inches, in latitude 34° 45′ N., longitude 141° E., and on the following day the Japanese S. S. *Toyooka Maru* reported a gale of force 8 from the south-southeast, lowest pressure 29.65 inches, in 39° 40′ N., 150° 10′ E. No further reports of the storm are available.

On May 5 signs of a tropical disturbance appeared to the southward of the Bonin Islands. On the 6th the disturbance moved northeastward, increasing in energy to a typhoon, and at noon was reported central near latitude 25° N., longitude 140° E. The British oil tanker *Adna,* Hongkong toward San Francisco, came within the influence of the typhoon on the 6th, and remained there until the 8th, but although it experienced rough seas, did not encounter winds of force higher than 7. The vessel, however, received reports of the typhoon's